

LOW'S RESORT (PWSNO 1090081) SOURCE WATER ASSESSMENT REPORT

February 21, 2003



State of Idaho Department of Environmental Quality

Disclaimer: This publication has been developed as part of an informational service for the source water assessments of public water systems in Idaho and is based on data available at the time and the professional judgement of the staff. Although reasonable efforts have been made to present accurate information, no guarantees, including expressed or implied warranties of any kind, are made with respect to this publication by the State of Idaho or any of its agencies, employees, or agents, who also assume no legal responsibility for the accuracy of presentations, comments, or other information in this publication. The assessment is subject to modification if new data is produced.

SOURCE WATER ASSESSMENT FOR LOW'S RESORT

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your drinking water source is based on well construction characteristics; site specific sensitivity factors associated with the aquifer the water is drawn from; a land use inventory inside the well recharge zone; and water quality history. For non-community transient water systems like Low's Resort, recharge zones were generally delineated as a 1000-foot fixed radius around the wells.

This report, *Source Water Assessment for Low's Resort* describes factors used to assess the well's susceptibility to contamination. The analysis relies on information from the well log; an inventory of land use, well site characteristics, potential contaminant sites identified through a Geographic Information System database search; and information from the public water system file. The ground water susceptibility analysis worksheet for Low's Resort is attached.

Taken into account with local knowledge and concerns, this assessment should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

Well Construction. Drinking water for Low's Resort comes from a 65 foot deep well located on the property line between Kaniku Resort and Low's Resort. The resorts, located on Priest Lake near Nordman, Idaho, and a private residence share the well through three separate distribution systems. The resorts submit separate samples for water quality testing.

No well head or surface seal maintenance deficiencies were noted when the well was inspected in September 2001. The 6-inch steel well casing extends 18 inches above ground surface and is fitted with a watertight well cap. The well is enclosed in a metal shed with a concrete floor and a locking door. Because the well log is not available, several risk factors related to construction and well site geology are unknown. The well needs to be tested for possible surface water influence. It is approximately 60 feet from the lakeshore, and during a prior inspection the static water level stood only 27 inches below land surface. Surface water is a serious contamination threat because it can carry disease-causing organisms that are resistant to disinfection into the ground water where they are not normally found.

Well Site Characteristics.

Hydrologic sensitivity scores are derived from information on the well log and from the soil drainage classification inside the recharge zone delineated for your well. Soils in the well recharge zone for the Low's Resort well are generally poorly drained to moderately well drained. Soils in these drainage classes provide some protection against migration of contaminants toward the well. The well is relatively shallow. Specific information about soil composition at the well site is not available.

Potential Contaminant Inventory.

The 1000-foot buffer zone delineated for the Lows Resort well covers an area that has been intensively developed for recreational use. Lows Resort includes a residence and 17 RV sites. The adjacent Kaniksu resort has marina facilities, a restaurant and convenience store, cabins and parking for 77 RVs. A leaking underground storage tank on the resort property was removed in 1989. Volatile organic chemical concentrations in the ground water drawn from test wells around the tank dropped below minimum detection levels by the spring of 1990. The delineated area also includes numerous private homes with individual septic systems. Septic systems are potential sources of inorganic chemical contaminants like nitrate in addition of viruses and bacteria. High volume systems serving multiple users and concentrations of individual systems exceeding 10 in 40 acres are counted as significant potential sources of microbial and inorganic chemical contaminants.

Water Quality History.

Low's Resort has had no persistent water quality problems. In the period from June 1998 through the present quarterly tests for total coliform bacteria have all been negative. The system failed to monitor in 5 quarters. Annual tests for nitrates show concentrations ranging between 0.053 and 0.171 mg/l. The Maximum Contaminant Level (MCL) for nitrate is 10 mg/l.

Susceptibility to Contamination.

An analysis of the Low's Resort well, incorporating information from the public water system file and the potential contaminant inventory, ranked the well highly susceptible microbial contamination because of its proximity to the lake and shallow static water level. The risk to the Low's Resort well relative to other classes of regulated contaminants is moderate. The complete analysis worksheet for your well is on page 6 of this report. Formulas used to compute final scores and susceptibility rankings are at the bottom of the worksheet.

Source Water Protection.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Operating and maintaining the well in compliance with Idaho Rules for Public Drinking Water Systems is the most important drinking water protection tool available Low's Resort. Adhering to the required testing schedule, especially during the summer months, when septic systems in the area as well as the water system are most heavily used, is vital for spotting problems that could affect public health.

Every system should develop an emergency response plan. There is a simple fill-in-the-blanks form available on the DEQ website ([http:// www.deq.state.id.us/water/water1.htm](http://www.deq.state.id.us/water/water1.htm)) to guide systems through the emergency planning process. Drinking water protection partnerships with other businesses in the capture zone and neighboring landowners should also be established. Some of them may not be aware that their property is in a sensitive area where household, maintenance or business practices could have a negative impact on water quality for the whole community.

The system should also investigate ground water protection programs like Home*A*Syst. These programs are designed to help well owners assess everyday activities for their potential impact on drinking water quality. Topics include septic tank management, petroleum product storage, handling and storing lawn and household chemicals and similar activities. Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

Assistance.

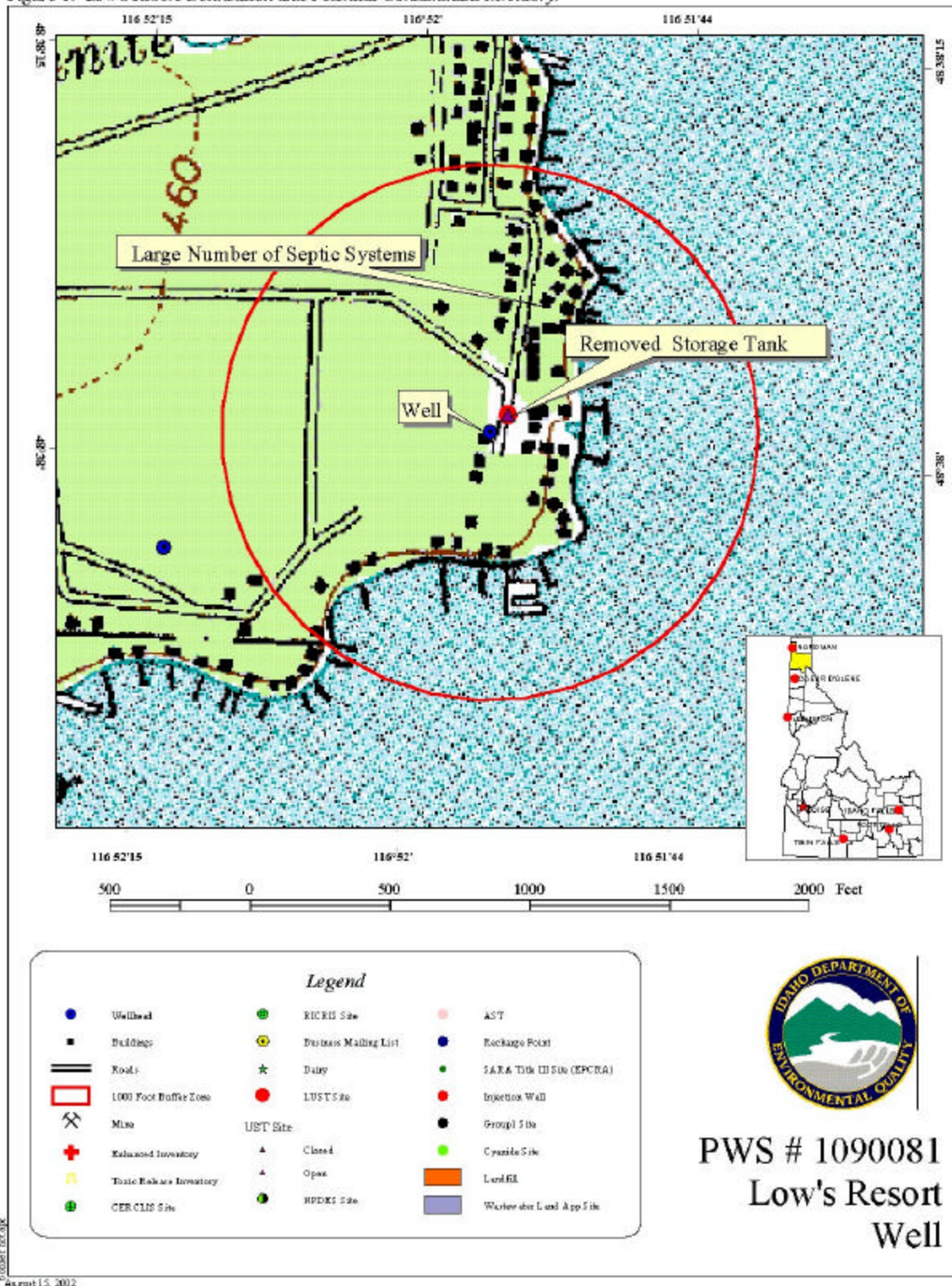
Public water suppliers and users may call the following IDEQ offices with questions about this assessment and to request help with drinking water protection planning.

Coeur d'Alene Regional DEQ Office (208) 769-1422

State IDEQ Office (208) 373-0502

Website: [http:// www.deq.state.id.us/water/water1.htm](http://www.deq.state.id.us/water/water1.htm)

Figure 1. Low's Resort Delineation and Potential Contaminant Inventory.



Ground Water Susceptibility

Public Water System Name : **LOW'S RESORT**
 Public Water System Number : **1090081**

Well # : **WELL 1**
 8/29/02 10:32:37 AM

1. System Construction		SCORE			
Drill Date	UNKNOWN				
Driller Log Available	NO				
Sanitary Survey (if yes, indicate date of last survey)	YES 2001				
Well meets IDWR construction standards	UNKNOWN	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	UNKNOWN	2			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
Total System Construction Score		4			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	YES	0			
Vadose zone composed of gravel, fractured rock or unknown	UNKNOWN	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	UNKNOWN	2			
Total Hydrologic Score		4			
3. Potential Contaminant / Land Use		IOC	VOC	SOC	Microbial
		Score	Score	Score	Score
Land Use	RECREATIONAL	2	2	2	2
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Sanitary Setback	Possible surface water influence	NO	NO	NO	YES
Total Potential Contaminant Source/Land Use Score - Zone 1A		2	2	2	2
Potential Contaminant / Land Use 1000 Foot Buffer Zone					
Contaminant sources present (Number of Sources)	Surface Water, Closed Fuel Tank, Camping Grounds, Septic Systems	3	2	2	4
(Score = # Sources X 2) 8 Points Maximum		6	4	4	8
Sources of Class II or III leacheable contaminants or Microbials	YES	3	2	2	
4 Points Maximum		3	2	2	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		9	6	6	8
Cumulative Potential Contaminant / Land Use Score		11	8	8	10
4. Final Susceptibility Source Score		11	10	10	12
5. Final Well Ranking		Moderate	Moderate	Moderate	*High

*High due to possible surface water influence

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)
- 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Ranking:

0 - 5 Low Susceptibility
 6 - 12 Moderate Susceptibility
 > 13 High Susceptibility

POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ? Superfund? is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.+